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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-------------------------|---------------------|------------------|
| 09/535,161 | 03/24/2000 | Loubaris Mohamed Faical | 78-1 | 4480 |

7590 08/12/2004

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EXAMINER

BRINEY III, WALTER F

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2644

DATE MAILED: 08/12/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/535,161

Applicant(s)

FAICAL, LOUBARIS MOHAMED

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8 and 12-21 is/are rejected.
- 7) ☒ Claim(s) 7 and 9-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities:

- Typo on line two; the limitation, "**...is determined by circuit...**"

For the purposes of this action, the examiner assumes the above limitation to be read as, "**...is determined by a circuit...**"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "**means for filtering the signal and for rectification of alternating current**" in lines 4-5 of the claim. There is insufficient antecedent basis for this limitation in the claim. For the purposes of this action, the examiner notes that claim 4 has been amended thus removing the limitation of rectification of alternating current. The examiner assumes that claim 12 should have been similarly modified.

Claims 13 and 14 are rejected because of their dependence on claim 12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 2-8, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US Patent 4,825,465) in view of .

Claim 21 is limited to **an electronic switching system**. Ryan discloses an exclusionary device for coupling plural telephonic devices to a single central office trunk (abstract; figure 3), wherein only one device is actually coupled to the line at a time (i.e. **for connecting electronically a common source of voltage (Ue) to a chosen user station selected from a plurality of user stations connected in parallel**). As seen in figure 3, each device (82, 84) is connected to a single central office trunk (18') by an associated pair of relays (58, 60 and 62, 64) (i.e. **the system comprising a number of cells equal to the number of user stations, each cell corresponding to one user station**). The relays allow telephonic communication when they are closed and block communication when they are open (abstract) (i.e. **wherein each cell comprises electronic means of connection to connect the corresponding user station to the common source of voltage**). For ease of explanation the operation will now be presented with device #1 being an active device with device #2 being idle. The relays (58, 60, 62, 64) are normally closed during an idle mode, but when device #1 goes off-hook current is detected by way of a sensing coil (L1'), the coil activates a blocking

transistor (Q1) controlling the connection of device #2 (column 4, line 59-column 5, line 64) (i.e. **a means of automatic blocking command**). As can be seen from the figure 3, when Q1 is rendered conductive a current flows through relays K₂ causing a pulse to latch relays (62, 64) associated with device #2 into an open position (i.e. **to control blocking of electronic connection of user stations other than the chosen station to the common source of voltage**). While the operation of the circuitry disclosed by Ryan has been shown to anticipate the above limitations of the claim, Ryan does not implement the current sensing and relay latching with optical circuitry. Thus, Ryan anticipates all limitations of the claim with the exception **wherein the means of automatic blocking command comprises one optical photo coupler**. Close teaches that the use of electromagnetic relays in telephony applications prevents the miniaturization and cost-savings of solid-state circuitry (column 2, lines 3-16). As seen in figure 1, Close discloses a current detector, not unlike the current detector used by Ryan for off-hook detection. Figure 2 shows that the current detector comprises a LED (30) and a photo-sensitive transistor (32). An LED replaces all sensing coils (Ryan figure 3, 30', 32', 34', 36', 72, 80) while a photo-sensitive transistor replaces all magnetically controlled latches (58, 60, 62, 64, 68, 76). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the LED and photo-sensitive transistor as taught by Close in place of the current-sensing coil and magnetically controlled latch of Ryan for the purpose of taking advantage of solid-state miniaturization and cost savings. In view of the above modification, Ryan in view of Close operates to detect device #1 going off-hook (i.e. **whereby upon connection of**

the chosen user station to the common source of voltage) by sensing current through an LED and generating an optical pulse to a photo-sensitive transistor (i.e. **flow of current through photodiodes in the cell corresponding to the chosen station saturates corresponding phototransistors located in cells not corresponding to the chosen user station**). By rendering the photo-sensitive transistor (L_1') conductive a current flows from a +V rail to a -V rail through a resistor (R_1), which renders a second transistor (Q_1) conductive, resulting in activation of a second LED (72), which places a photo-sensitive transistor (62, 64) into a cut-off state (i.e. **which in turn block ballast transistors located in said cells not corresponding to the chosen user station, thereby blocking the connection of user stations other than the chosen station to the common voltage source**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 2 is limited to **an electronic switching system according to claim 21**, as covered by Ryan in view of Close. Because the circuitry used by Ryan in view of Close is analog, inherent variations between all components will inherently result in one circuit being chosen in the case of the devices accessing the telephone line simultaneously (i.e. **wherein there is a default user station that is normally the chosen user station**).

Claim 3 is limited to **an electronic switching system according to claim 2**, as covered by Ryan in view of Close. The relays of Ryan (figure 3, elements 58, 60, 62, 64) decouple the two devices illustrated from each other and from the central office trunk, therefore, the sinking line of the trunk is coupled to only one of the devices at a

time (i.e. **including a means of separation of grounds for the chosen user station and the other user stations**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 4 is limited to **an electronic switching system according to claim 3**, as covered by Ryan in view of Close. As illustrated in figure 3, Ryan discloses a current sensing means (30', 32' and 34', 36') and disconnection means (58, 60 and 62, 64) (i.e. **a means for separation for the grounds**) for each device (i.e. **including a cell for each user station; and a means for electrically connecting terminals of the chosen station at boundaries of the source of voltage**). Ryan discloses that each current sensing element also includes a bypass capacitor (C1, C2, C3, C4) that is necessary to prevent the current sensing devices of one device from opening the relays of the other device in the presence of a ringing current, but also pass ringing current to each of the devices (column 4, lines 10-18) (i.e. **a means for filtering a signal**). As pointed out in claim 2, the analog components of the current sensing means inherently define the speed at which each device's relays are activated (i.e. **a means for determination of a response time of the cell**). When the current sensing devices, which have been replaced by optical circuitry as motivated in claim 1, detect current flowing to their respective device, they transmit an optical pulse causing the relays of the other device to open (i.e. **and a means for command of disconnection including optical couplers to control the electronic blocking of connection of the source of the voltage to the other cells**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 5 is limited to **an electronic switching system according to claim 4**, as covered by Ryan in view of Close. As seen in figure 3 of Ryan, each current sensing device, which has been replaced with an LED (i.e. **optical coupler**), is coupled in series with the central office trunk (i.e. **wherein the optical couplers are electrically connected in series**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 6 is limited to **an electronic switching system according to claim 4**, as covered by Ryan in view of Close. As seen in figure 3 of Ryan, each current sensing device, which has been replaced with an LED (i.e. **optical coupler**), is coupled in parallel with another current sensing device associated with the same device (i.e. **wherein the optical couplers are electrically coupled in parallel**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 7 is limited to **an electronic switching system according to claim 4**, as covered by Ryan in view of Close. As explained in claim 2, the analog circuitry utilized by Ryan in view of Close inherently generates a response time for each exclusionary device. Furthermore, the resistors (R1, R3) and capacitors (C5, C6), which control the blocking relays inherently control the response time of the devices as they are analog devices (i.e. **wherein the response time is determined by a circuit in each cell containing at least one resistor and at least one capacitor**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 8 is limited to **an electronic switching system according to claim 7**, as covered by Ryan in view of Close. As shown above with reference to claims 2 and 7,

there is an inherent processing time differential between the two exclusionary devices disclosed by Ryan because they are implemented using analog circuitry. The device with the lowest time constant will be **the default user station**. Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 15 is limited to **an electronic switching system according to claim 4**, as covered by Ryan in view of Close. As seen in figure 3, Ryan discloses relay actuating circuitry (66 and 74), which responds to a sensed current flowing to a device by charging a storage capacitor (C_5 , C_6) and eventually turning on a transistor (Q_1 , Q_2), transistors having an inherent threshold voltage wherein once the transistor is activated, or triggered, a current rushes through (i.e. **wherein the means for determination of the response time of the cell includes a trigger circuit which determines a response time of blocking the activation of the means for command of disconnection**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 16 is limited to **an electronic switching system according to claim 15**, as covered by Ryan in view of Close. As shown in claim 15, Ryan discloses a transistor that controls the actuation of disconnection relays (58, 60, 62, 64), the transistor (Q_1 , Q_2) being controlled by a charging capacitor (C_5 , C_6) (i.e. **wherein the trigger circuit is controlled by a charging and a discharging of a capacitor**). Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 17 is limited to **an electronic switching system according to claim 4**, as covered by Ryan in view of Close. Claim 4 is directed toward an electronic switching

system that allows only one user device from accessing a common voltage source.

Reciting that the user stations are **telephone sets** constitutes an intended use of the invention and does not further limit the claim because the structure of the switching system is unaffected by the class of user devices used.

Claim 18 is limited to **an electronic switching system according to claim 4**, as covered by Ryan in view of Close. Claim 4 is directed toward an electronic switching system that allows only one user device from accessing a common voltage source. Reciting that the user stations are **motors** constitutes an intended use of the invention and does not further limit the claim because the structure of the switching system is unaffected by the class of user devices used.

Claim 19 is limited to **an electronic switching system according to claim 3**, as covered by Ryan in view of Close. Claim 19 includes limitations that were introduced in claim 4, and are rejected for at least the same reasons presented therein. Claim 19 further recites the limitation **wherein each user station is electronically connected to a cell, and at least one cell is electrically connected to a plurality of user stations**. As seen in figure 3, each exclusionary device (26' and 28') connects to a user device, either device #1 or device #2. In addition, each exclusionary device is connected to the other device in order to control that device's relay, the relays being connected to each user. Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Claim 20 is limited to **an electronic switching system according to claim 3**, as covered by Ryan in view of Close. Claim 20 includes limitations that were introduced in claim 4, and are rejected for at least the same reasons presented therein. Claim 20

further recites the limitation **wherein each user station is electrically connected to a cell, and at least one cell is electrically connected to another cell**. As seen in figure 3, each exclusionary device (26' and 28') connects to a user device, either device #1 or device #2. In addition, each exclusionary device is connected to the other device in order to control that device's relay, the relays being connected to each user. Therefore, Ryan in view of Close makes obvious all limitations of the claim.

Allowable Subject Matter

Claims 9-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if all 35 U.S.C. 112 second paragraph rejections are overcome.

Claim 9 is limited to **an electronic switching system according to claim 8**, as covered by Ryan in view of Close. As shown in claim 2, the analog circuitry used by Ryan in view of Close has an inherent time delay, which inherently effects the rate at which each exclusionary device will react to detected current flow. However, neither Ryan nor Close suggests to include a bypass switch in parallel to the charging resistor of the exclusionary circuitry in order to make one user a default user. Therefore, Ryan in view of Close makes obvious all limitations of the claim with the exception of **at least one of the cells includes a switch in parallel with a resistor, and when the switch is closed the cell's user station becomes the default user station**. Thus, Claim 9 is allowable over Ryan in view of Close.

Claim 10 is limited to **an electronic switching system according to claim 8**, as covered by Ryan in view of Close. As seen in figure 3 of Ryan, there is no diode bridge used in the current sensing arrangement. Therefore, Ryan in view of Close makes obvious all limitations of the claim with the exception of **a bridge of four diodes**. Most diode bridges are used to rectify incoming telephone signals such that one wire is always positive with respect to the other. Ryan avoids this necessity by using a pair of current sensors, one for each wire of a central office trunk. Therefore, claim 10 is allowable over Ryan in view of Close.

Claim 11 is limited to **an electronic switching system according to claim 8**, as covered by Ryan in view of Close. As seen in figure 3 of Ryan, there is no diode bridge used in the current sensing arrangement. Therefore, Ryan in view of Close makes obvious all limitations of the claim with the exception of **a bridge of two diodes and two thyristors**. Most diode bridges are used to rectify incoming telephone signals such that one wire is always positive with respect to the other. Ryan avoids this necessity by using a pair of current sensors, one for each wire of a central office trunk. Therefore, claim 11 is allowable over Ryan in view of Close.

Claim 12 is limited to **an electronic switching system according to claim 8**, as covered by Ryan in view of Close. Ryan discloses a pair of line coupling relays (58, 60 and 62, 64) for each device, which have been replaced with photo-sensitive transistors. When current is detected by the line sensing device of device #1 (L_1') a control pulse is sent to circuit 66, which causes a control transistor to become conductive (Q_1), and finally opening up, or rendering non-conductive relays 62 and 64. Therefore, Ryan does

not disclose rendering a transistor of connection to become conductive when a transistor of command becomes conductive, but causes a transistor of connection to become nonconductive. Therefore, Claim 12 would be allowable over Ryan in view of Close if the 35 U.S.C. 112 second paragraph rejection is overcome.

Claims 13 and 14 would be allowable over Ryan in view of Close for the same reasons given in claim 12.

Response to Arguments

Applicant's arguments with respect to claims 2-21, filed 26 May 2004, have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WFB
8/6/04


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